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NEW GENERA AND SPECIES OF PERUVIAN PHYCITINAE (LEPIDOPTERA: PYRALIDAE)

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Abstract.—Three new genera of phycitine moths from Peru are described. They are ***Depeadus*** n. gen. with ***D. deiulus*** n. sp., ***Montestra*** n. gen. with ***M. dentata*** n. sp., and ***Eurythmioides*** n. gen. with ***E. carasensis*** n. sp. Also described from Peru is ***Caviana peruviensis*** n. sp.

Key Words: Moths, phycitines, Peru

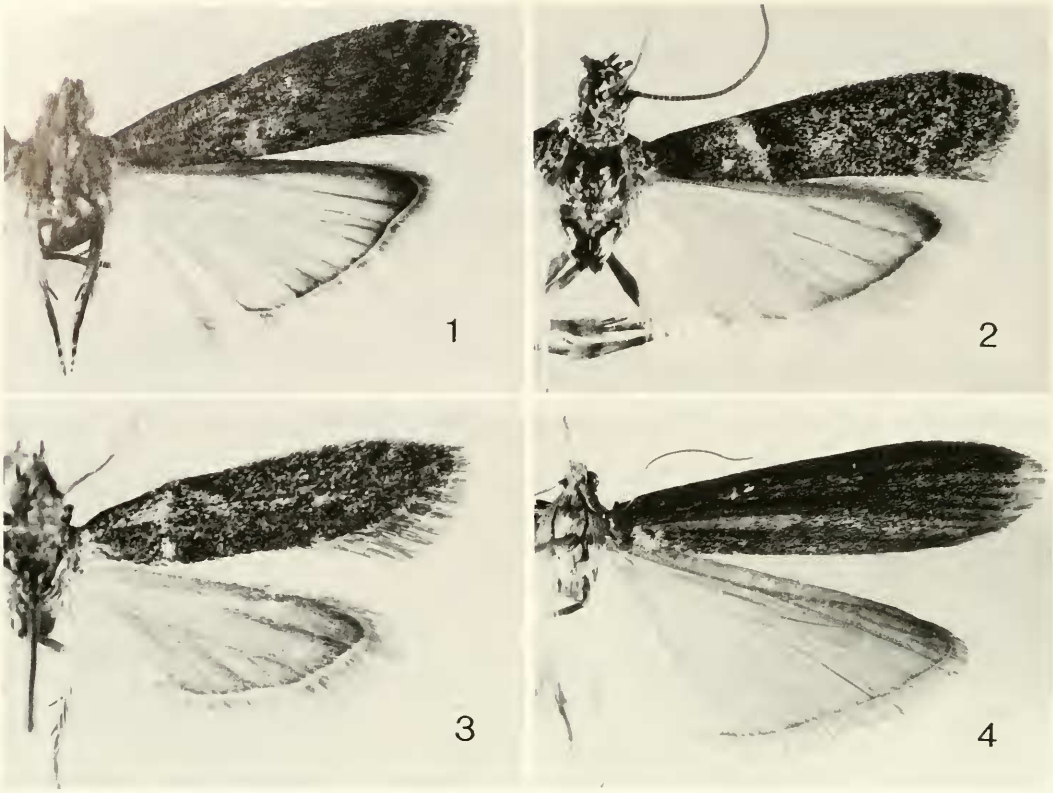
In 1987, O. Karsholt, of the Zoological Museum of the University of Copenhagen (ZMUC) collected a series of phycitine moths in Peru. He generously offered this material, along with a smaller amount of other Peruvian Phycitinae in the ZMUC, to me for study. Included in the loan were 4 new species, descriptions of which are given here. Most previously described Peruvian phycitines (Heinrich 1956) have been collected at low to moderate elevations, mainly along the coast. Two of the species described herein were obtained at mountainous sites of 3000, to over 4000, meters.

Depeadus Neunzig, New Genus

Gender.—Masculine.

Type species.—*Depeadus deiulus* Neunzig.

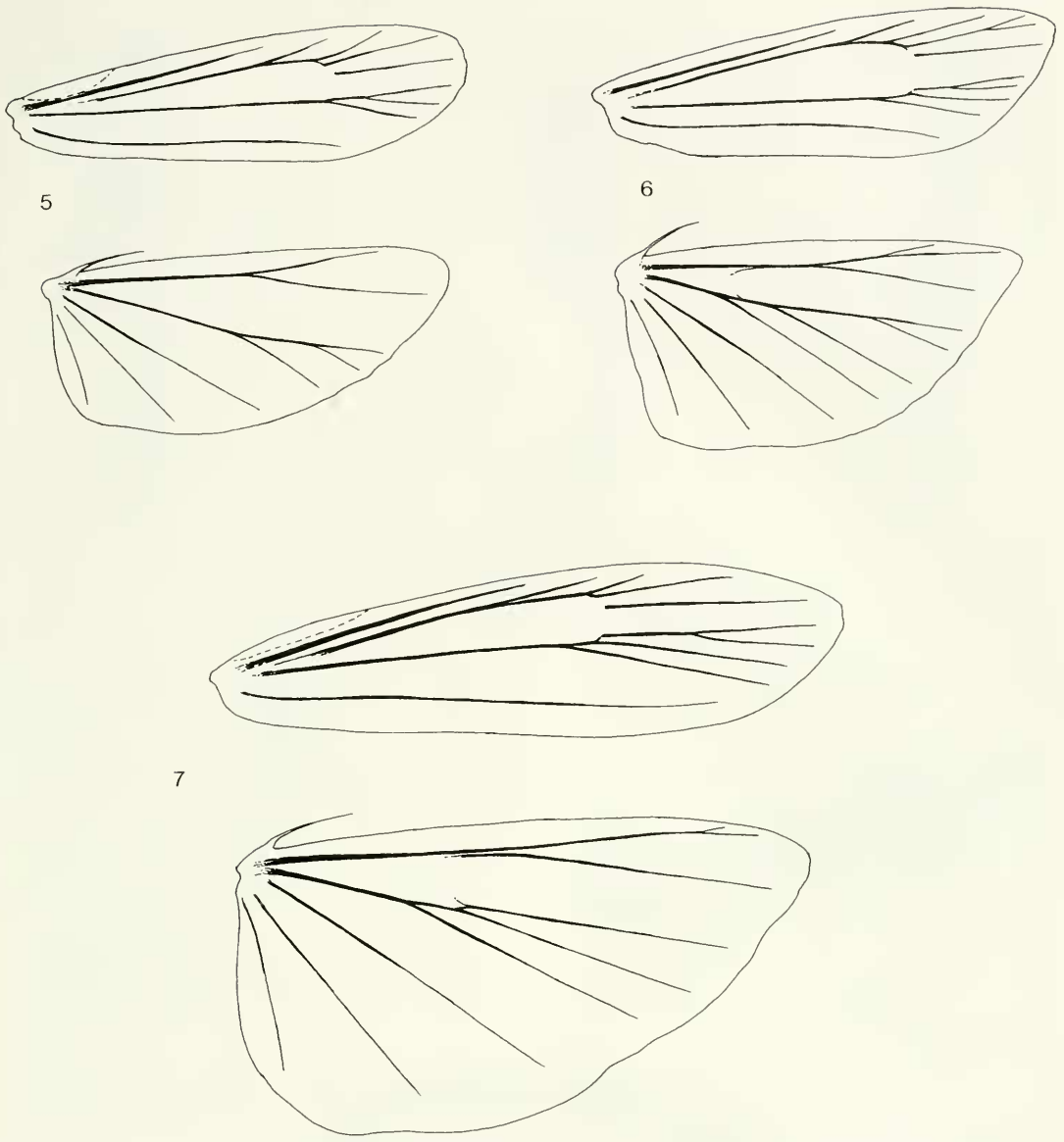
Antenna of male (Fig. 9) with distinct sinus at base of shaft; elongate scales clothing distoanterior part of sinus; sensilla trichodea (cilia) of shaft of male moderately abundant, and near base of shaft about ½ as long as basal diameter of shaft. Front convex, with scales produced anteriorly. Labial palpus robust, upturned. Haustellum well developed. Ocellus present. Basal half of costa of forewing of male (Fig. 6) slightly convex; underside of male wing without costal fold. Forewing without raised scales; with eleven veins, R_2 distant at base from R_{3+4} and R_5 and upper outer angle of cell; R_{3+4} and R_5 stalked for slightly over ½ their lengths; M_1 straight; M_2 and M_3 stalked for about ⅓ their lengths; CuA_1 from lower outer angle of cell; CuA_2 from well before outer angle of cell. Hindwing (Fig. 6) with eight veins (1A, 2A and 3A considered to be one vein); Sc + R_1 and Rs fused for about ½ their lengths beyond cell; M_1 from upper outer angle of cell and its basal ¼ fused with Sc + R_1 and Rs; M_2 and M_3 fused for about ½ their lengths; CuA_1 fused at base with stalk of M_2 and M_3; CuA_2 from well before angle of cell; cell about ⅓ length of wing. Male abdominal segment 8 with ventral scale tufts; sclerotized element associated with tufts U-shaped and with distally swollen medial projection. Male genitalia (Figs. 19, 20) with uncus narrow, triangular, and weakly sclerotized; gnathos absent; transtilla with long, setiferous, bladelike, lateroposteriorly directed arms; juxta broadly V-shaped with lateral, setiferous protuberances; valva short, strongly knobbed, and with long, slender, costal projection at base, and large, posteriorly projecting, hooked, apically swollen and spined element; sacculus delineated from valva by



Figs. 1–4. Male adults. 1, *Depeadus deiulus* n. sp., holotype (11.5 mm). 2, *Caviana peruviensis* n. sp., holotype (6.0 mm). 3, *Eurythmioides carasensis* n. sp., holotype (5.5 mm). 4, *Montestra dentata* n. sp., holotype (20.0 mm). (Length of forewing in parentheses.)

strongly sclerotized ridge; dorsodistal surface of valva with many long, slender scales; linear aggregation of long slender scales also originating at base of valva; aedoeagus robust with apical ¼ strongly spined; cornutus a strongly sclerotized blade; vinculum longer than greatest width, anterior margin with concavity. Female genitalia (Fig. 22) with ductus bursae short, sclerotized; dorsal plate behind genital opening with granulate, pocketlike, lateral lobes; corpus bursae elongate, about 2½× longer than ductus bursae, membranous, and with posterior ⅓ to ½ with numerous spines and scobinations; signum absent; ductus seminalis attached to corpus bursae near junction with ductus bursae.

Depeadus shares the following features with *Peadus* Heinrich: (1) forewing with eleven veins, and hindwing with eight veins; (2) male antenna with sinus at base of shaft; (3) male genitalia with uncus greatly reduced, gnathos indistinguishable, valva short, sacculus bearing large scale tufts, aedoeagus spined at apex; (4) female genitalia with ductus bursae sclerotized and much shorter than corpus bursae, and with sclerotized dorsal plate behind genital opening. Differences between the two genera include: (1) M_2 and M_3 of forewing separate in *Peadus,* stalked for basal ⅓ in *Depeadus*; (2) Sc + R_1 and Rs of hindwing briefly fused at base in *Peadus,* fused for ½ their lengths beyond cell in *Depeadus*; (3) male genitalia without transtilla, and with divided valva in *Peadus,* with well developed transtilla, and entire valva in *Depeadus*; (4) female genitalia with corpus bursae with single



Figs. 5–7. Male wing venation. 5, *Eurythmioides carasensis* n. sp. (5.5 mm). 6, *Depeadus deiulus* n. sp. (11.5 mm). 7, *Montestra dentata* n. sp. (20.0 mm). (Length of forewing in parentheses.)

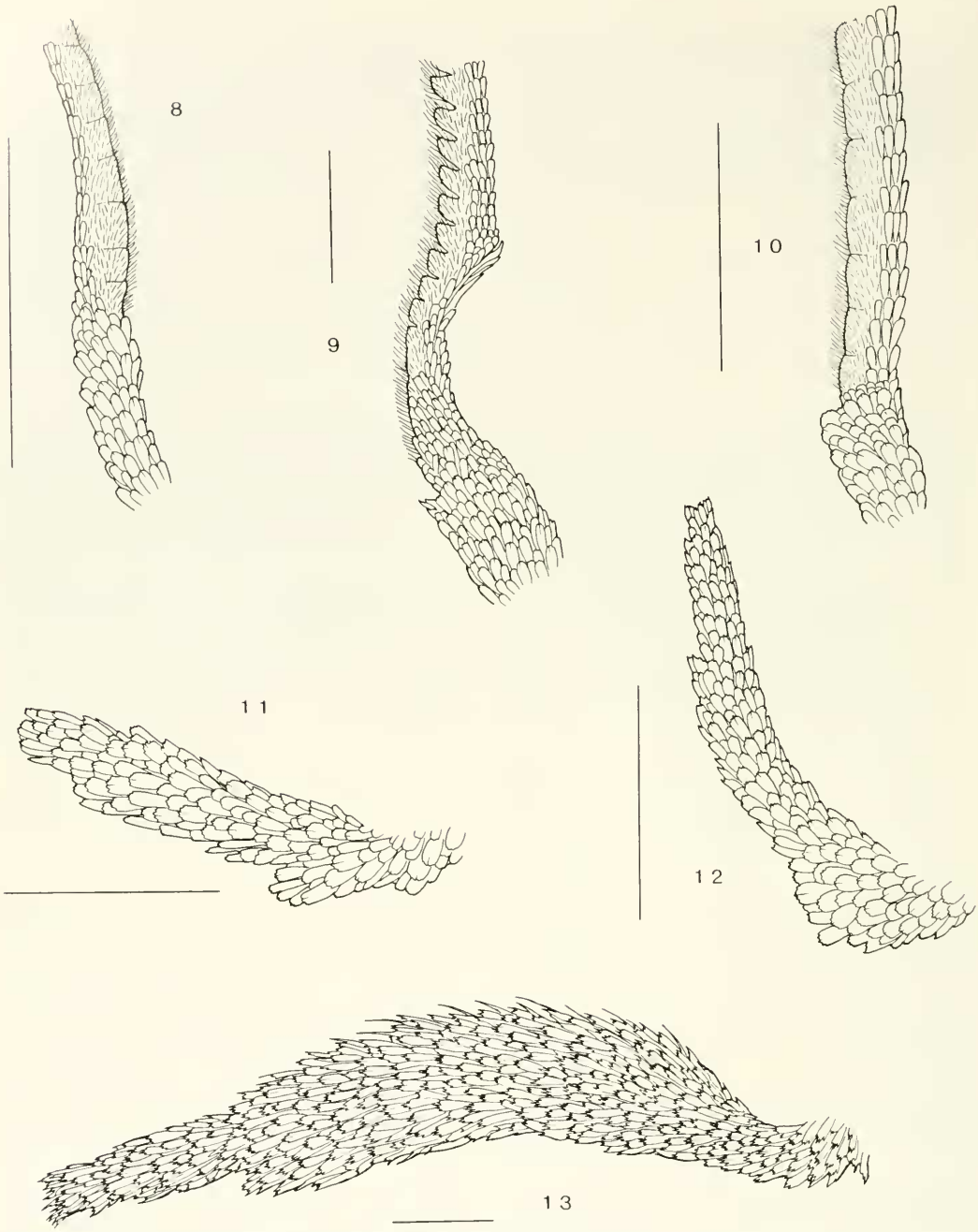
thornlike spine (signum) in anterior ½ in *Peadus,* without signum, but with numerous spines in posterior ⅓–½ in *Depeadus.*

Depeadus deiulus **Neunzig, New Species**
Figs. 1, 6, 9, 19, 20, 22

Type locality.—5 km E. Limbani, 3000 m, Dept. Puno, Peru.

Diagnosis.—The slender, bladelike, lateral arms of the transtilla, and the long costal projection, and large, hooked and spined element, on the valva of the male genitalia are diagnostic.

Description.—Length of forewing 11.5 mm. Head with frons and vertex pale brown and white with a few reddish brown and



Figs. 8–13. Male antennae and labial palpi. 8, *Eurythmioides carasensis* n. sp., frontal view of basal segments. 9, *Depeadus deiulus* n. sp., frontal view of basal segments. 10, *Caviana peruviensis* n. sp., frontal view of basal segments. 11, *Eurythmiodes carasensis* n. sp., lateral view. 12, *Caviana peruviensis* n. sp., lateral view. 13, *Montestra dentata* n. sp., lateral view. (All scale lengths 0.5 mm.)

dark brown scales in male, pale brown and white in female; labial palpus mostly pale brown with some reddish brown and dark brown to black scales in both sexes; maxillary palpus mostly pale brown with dark brown at base. Thorax dorsum and collar mostly pale brown to pale reddish brown (most scales paler at tip) with scattered dark brown, black, red and reddish brown scales. Forewing with ground color pale brown dusted with white, with scattered ochre and dark brown to black scales; antemedial line white to brownish white, moderately distinct in posterior half of wing; patches of black at costa basad of antemedial line and basad and distad of antemedial line in posterior half; postmedial line weakly developed, best defined in costal half where patches of black scales establish its proximal and distal borders; patches of, and a few isolated, red or reddish brown, scales, mostly in distal half; discal spots dark brown to black, moderately distinct. Underside of forewing of male without sex-scaling. Hindwing pale smoky brown, darker on veins and near costal and outer margins. Male and female genitalia as given under generic description.

Distribution.—Known only from southeastern Peru.

Holotype.—♂—5 km E. Limbani, 3000 m, Dept. Puno, Peru, 28.iii.1987, O. Karsholt leg., genitalia slide 3450 HHN (ZMUC).

Paratype.—♀—Same collection data as holotype, genitalia slide 3451 HHN (ZMUC).

Caviana Neunzig and Dow, 1993

Caviana peruviensis Neunzig, New Species

Figs. 2, 10, 12, 14, 15

Type locality.—15 km N. Carás, Rio Salta Valley, ca. 2000 m, Ancash, Peru.

Diagnosis.—*C. peruviensis* has the following combination of features: a shallow, mostly exposed depression on the frons just anterior to the antennae; male genitalia with a distally attenuated uncus and a dorsally directed spur on the valva.

Description.—Length of forewing 6.0 mm. Head with frons with shallow concavity partially covered anteriorly by dome of posteriorly and mesially projecting black and white scales; surface of concavity with many, white microscales; vertex white, fuscous and black; male antenna (Fig. 10) simple; labial palpus (Fig. 12) upcurved, extending above vertex, mostly fuscous and black, white at base of first and second segments and at tip of second and third segments; maxillary palpus simple, fuscous, black and white. Thorax dorsum and collar fuscous and black, dusted with white. Forewing mostly fuscous and black, dusted with white; antemedial line distinct, white, extending diagonally from costa distally to posterior margin; postmedial line indistinct, white; small patches of pale reddish brown scales subbasally, near posterior margin and in medial area adjacent to antemedial line; discal spots not apparent, blending with black and white pattern of wing. Underside of wing of male with elongate costal fold. Hindwing mostly white, fuscous near costal and outer margins. Male abdominal segment 8 simple. Male genitalia (Figs. 14, 15) with uncus strongly tapered and slender distally; gnathos with distal part a single, short, straplike element; transtilla incomplete; juxta a plate with slender, lateral lobes; valva with subapical, dorsoposteriorly directed spur on costa; vinculum slightly longer than greatest width; aedoeagus robust with platelike, folded cornutus. Female unknown.

C. peruviensis differs most noticeably from *Caviana fuscella* Neunzig and Dow, the only other known species in the genus, in having: (1) a strongly developed, straight antemedial line (rather than an indistinct, dentate antemedial line), and (2) a projection at the apex of the costa of the valva that is robust, blunt and directed dorsoposteriorly (rather than an apical, costal projection that is spinelike and curved ventrally).

Distribution.—Known only from northwestern Peru.

Holotype.—♂—15 km N. Carás, Rio Salta

Valley, ca. 2000 m, Dept. Ancash, Peru, 19–21.ii.1987, O. Karsholt, genitalia slide 3469 HHN (ZMUC).

Montestra Neunzig, New Genus

Gender.—Feminine.

Type species.—*Montestra dentata* Neunzig.

Antenna simple in both sexes; sensilla trichodea (cilia) of male moderately abundant and at base of shaft about ¾ as long as basal diameter of shaft. Frons convex. Labial palpus (Fig. 13) porrect, long, extending, in both sexes, beyond head about 4× length of head. Maxillary palpus simple. Haustellum well developed. Ocellus absent. Forewing, of male, (Fig. 7) with basal half of costa slightly convex; underside of wing, of male, with costal fold; with ten veins; R_{3+4} and R_5 completely united; M_1 from well below upper angle of cell; M_2 and M_3 stalked for slightly less than ½ their lengths; CuA_1 from lower angle of cell; CuA_2 from well before lower angle of cell. Hindwing (Fig. 7) with seven veins (1A, 2A and 3A together considered as one vein); Sc + R_1 and Rs fused for most of their lengths; M_1 originating slightly below upper angle of cell; M_2 and M_3 completely fused; CuA_1 from slightly before lower angle of cell; CuA_2 from well before lower angle of cell; cell less than ½ length of wing. Male abdominal segment 8 without scale tufts. Male genitalia (Figs. 18, 21) with uncus subtriangular, broadly rounded apically; distal process of gnathos a short, bluntly pointed hook; transtilla complete, triangularly shaped; juxta a narrow U-shaped band with very short, setiferous lobes; valva with short, costal tooth; aedoeagus with elongate, thin cornutus; vinculum about as long as greatest width. Female genitalia (Fig. 23) with ductus bursae sclerotized for slightly over ½ its length; corpus bursae membranous, with moderately distinct signum consisting of a loose aggregation of 5–6 thornlike spines; ductus seminalis joined to corpus bursae just anterior to signum.

The male and female genitalia of *Montestra* resemble those of *Vitula* Ragonot and *Volatica* Heinrich—in all three genera the males have a short, simple, distal hook on the gnathos, a complete, triangularly shaped transtilla, and a juxta with short setiferous arms, and the females have the ductus bursae sclerotized for about ½ its length and a membranous corpus bursae. Nevertheless, the transverse markings on the forewing characteristic of *Vitula* and *Volatica* are completely lacking in *Montestra*; instead *Montestra* has longitudinal bands on a narrower forewing. Also, *Montestra* differs from both *Vitula* and *Volatica* in that the costa of the valva has a distinct, dorsally directed toothlike element, a feature lacking in the other genera. Furthermore, the elongate labial palpi of *Montestra* are similar to those of *Volatica,* but the number of veins in the forewing are fewer in *Montestra* than in *Volatica*; the number agrees with the venation found in *Vitula,* but *Vitula* has rather short labial palpi.

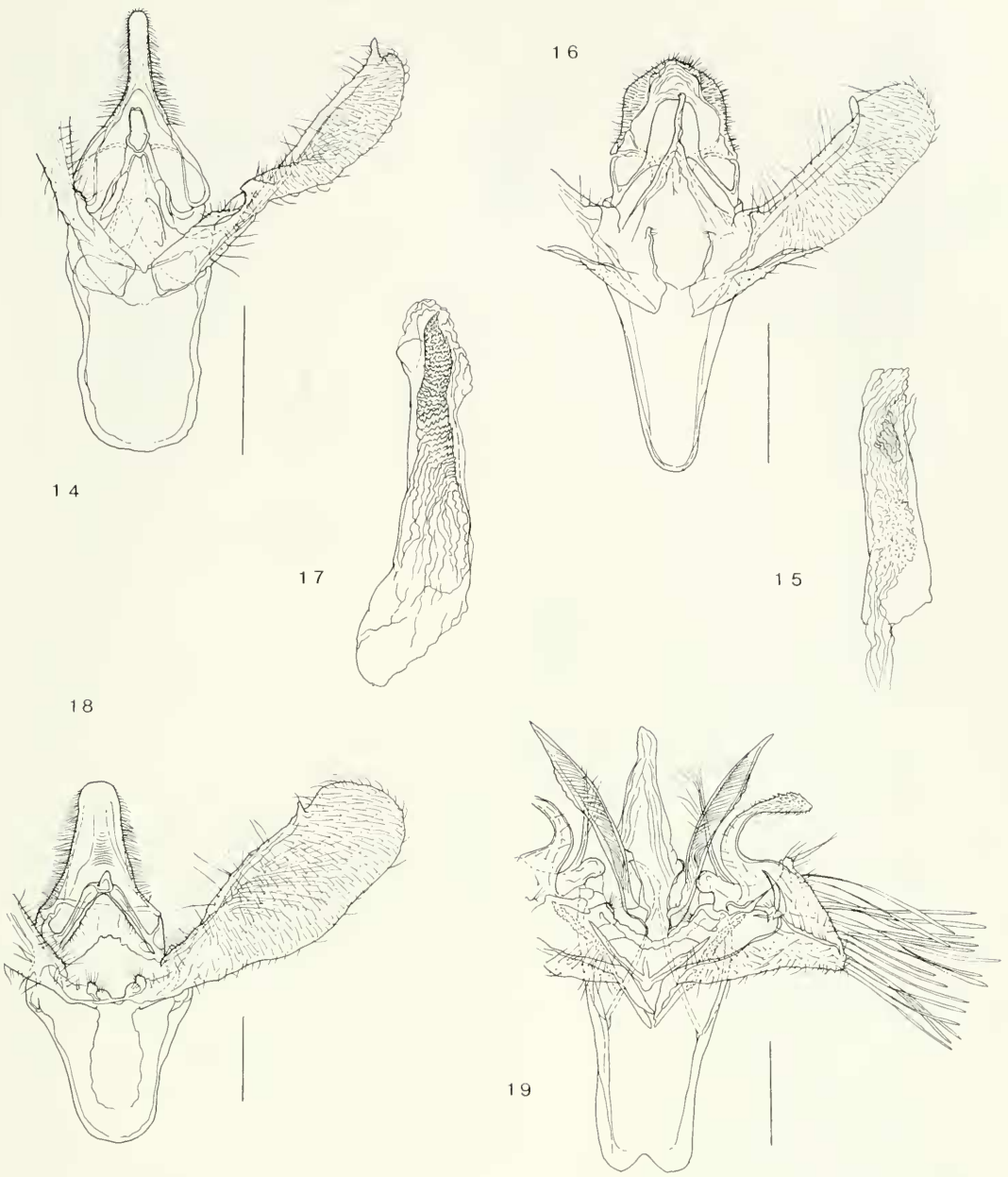
Montestra dentata Neunzig, New Species

Figs. 4, 7, 13, 18, 21, 23

Type locality.—35 km SE. Huaráz, Dept. Ancash, Peru.

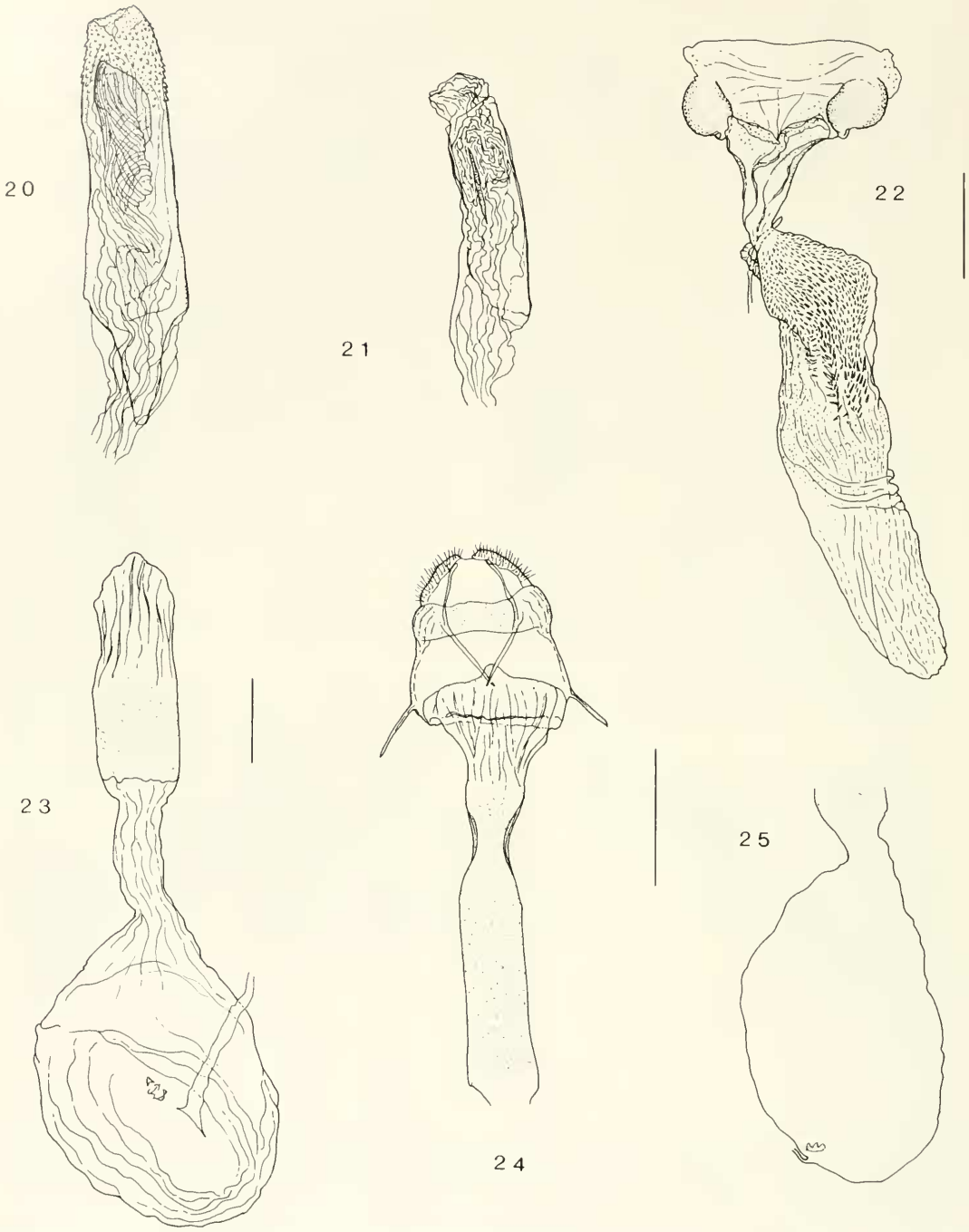
Diagnosis.—*M. dentata* is a rather large phycitine (average forewing length of eight specimens 18.0 mm) with longitudinally streaked forewings, long, porrect labial palpi, and a costal tooth on the valva of the male genitalia.

Description.—Length of forewing 14.0–20.0 mm. Head with frons and vertex pale brown to pale reddish brown; labial palpus (Fig. 13) brown to pale brown dusted with white (venter of segments, particularly basal segments, sometimes completely white); maxillary palpus brownish white. Thorax with dorsum and collar pale brown to pale reddish brown. Forewing usually mostly pale brown to pale reddish brown with broad



Figs. 14–19. Male genitalia. 14, *Caviana peruviensis* n. sp., aedoeagus omitted. 15, aedoeagus. 16, *Eurythmioides carasensis* n. sp., aedoeagus omitted. 17, aedoeagus. 18, *Montestra dentata* n. sp., aedoeagus omitted. 19, *Depeadus deiulus* n. sp., aedoeagus and some scales omitted. (All scale lengths 0.5 mm.)

brown to dark brown subcostal and median longitudinal streaks and yellowish white pale scales between streaks; forewing of some (like the holotype) with darker scales over almost entire surface, obscuring most longitudinal streaks; antemedial and postmedial lines not present; discal spots dark brown to black, moderately distinct to ob-



Figs. 20–25. Male and female genitalia. 20, *Depeadus deiulus* n. sp., aedoeagus. 21, *Montestra dentata* n. sp., aedoeagus. 22, *Depeadus deiulus* n. sp., ventral view of ductus bursae, corpus bursae and ductus seminalis. 23, *Montestra dentata* n. sp., ventral view of ductus bursae, corpus bursae and ductus seminalis. 24, *Eurythmioides carasensis* n. sp., ventral view of posterior part. 25, ventral view of anterior part. (All scale lengths 0.5 mm.)

scure. Underside of forewing, of male, without sex-scales. Hindwing pale smoky fuscous. Male and female genitalia as given under description of genus.

Distribution.—collected at 3240 to 4100 m in the Peruvian Cordillera Negra and Cordillera Vilcabamba.

Holotype.—♂—Quabrada Pucavado, Cerro Cahuish, 35 km SE. Huaráz, 4100 m, Dept. Ancash, Peru, 15–18.ii.1987, O. Karsholt leg., genitalia slide 3463 HHN (ZMUC).

Paratypes.—2 ♀, same collection data as holotype, genitalia slides 3464, 3465 HHN (ZMUC); 2 ♀, 5 km E. Laguna Pomacanchi, 40 km NW. Sicuani, 3240 m, Dept. Cuzco, Peru, 24.iii.1987, O. Karsholt leg. (ZMUC); 3 ♀, Pueblo Quichas, Quabrada Quichas, 10 km N. Oýon, 4000 m, Dept. Lima, Peru, 24–26.ii.1987, O. Karsholt leg (ZMUC).

Eurythmioides Neunzig, New Genus

Gender.—Masculine.

Type species.—*Eurythmioides carasensis* Neunzig

Antenna of both sexes simple (Fig. 8). Front convex with most scales directed anteriorly to form a conelike projection. Labial palpus oblique (Fig. 11). Maxillary palpus simple. Haustellum well developed. Ocellus ?present. Basal half of costa of forewing of male (Fig. 5) slightly convex; underside of wing of male with costal fold. Forewing without raised scales; with nine veins; R_{3+4} and R_5 completely fused; M_1 from below upper angle of cell; fused M_{2+3} stalked with CuA_1 for slightly more than ½ their lengths; CuA_2 from close to lower angle of cell. Hindwing (Fig. 5) with six veins (1A, 2A, and 3A considered together to be one vein); Sc + R_1 and Rs completely fused; M_1 from upper angle of cell; M_{2+3} and CuA_1 stalked for about ½ their lengths; CuA_2 from close to lower angle of cell; cell about ½ length of wing. Male abdominal segment 8 with scale tufts; some scales forming tufts straight, others sinuous. Male genitalia (Figs. 16, 17) with uncus broadly triangular; gnathos distally a broad, tonguelike plate; transtilla complete, with slender, distal hook; juxta a U-shaped plate with short, setiferous lateral lobes; valva with costa strongly sclerotized for about ¾ its length and with sclerotized part terminating in short, slightly curved, dorsal projection; inner base of valva with setiferous, triangular lobe; aedoeagus enlarged at base and with a well-sclerotized, saw-toothed, spiral element; vinculum longer than greatest width. Female genitalia (Figs. 24, 25) with very short apophyses posteriores and apophyses anteriores; ductus bursae longer than corpus bursae, sclerotized and granulate for about ⅞ its length with a strongly sclerotized shield behind genital opening, and with a sclerotized band posterior to opening; ductus bursae membranous, oval, with signum a fused cluster of a few thornlike spines near anterior end of ductus bursae; ductus seminalis attached to corpus bursae close to signum.

The female genitalia of *Eurythmioides*, especially the very short apophyses, are like those of *Ephestiodes* Ragonot, but, the greatly reduced wing venation, and the complete transtilla and toothed and spiraled cornutus of the aedoeagus of the male genitalia of the former genus differ from those of the latter group and, therefore, suggest that *Eurythmioides* is more closely allied to *Eurythmia* Ragonot.

Eurythmioides carasensis Neunzig, New Species

Figs. 3, 5, 8, 11, 16, 17, 24, 25

Type locality.—15 km N. Carás, Rio Salta Valley, ca. 2000 m., Ancash, Peru.

Diagnosis.—The platelike distal element of the gnathos, and the slender, distal hook of the transtilla, of the male genitalia are diagnostic.

Description.—Length of forewing: 5.5–6.5 mm. Head with front and vertex brown, some scales, particularly near eyes, brownish white or tipped with brownish white; labial palpus brown and brownish white, palest on basal segment; maxillary palpus

brownish white. Thorax with dorsum pale brown to brown, some brown scales faintly tipped with brownish white, collar generally slightly paler than dorsum. Forewing with ground color brown to dark brown dusted with white and brownish white; weakly developed reddish brown streaks or patches mostly in posterior half; costal half of basal area with obscure pale longitudinal streak; antemedial and postmedial lines indistinct, white and brownish white; discal spots dark brown to black, obscure. Hindwing smoky fuscous, darker along veins and near costal and outer and posterior margins. Male and female genitalia (Figs. 16, 17, 24, 25) as in description of genus.

Distribution.—Known only from northwestern Peru. The few specimens collected have been taken near a river or in a river valley at low to moderate elevations.

Holotype.—♂—Rio Salta Valley, ca. 2000 m., 15 km N. Carás, Dept. Ancash, Peru, 19–21.ii.1987, O. Karsholt leg., genitalia slide 3470 HHN. (ZMUC)

Paratypes.—2 ♀—Same collection data as holotype, genitalia slides 3471, 3473 HHN. (ZMUC). 1 ♂—7 km E. Ogatun, 100 m. E. side of Rio Zaña, 35 km SE. Chiclayo, Dept. Lambayeque, Peru, 18.v.1987, N. Krabbe leg., genitalia slide 3481 HHN (ZMUC).

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